

# 1.1 Introduction to Machine Learning

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- **Regression/Estimation**  
Predicting continuous values
- **Classification**  
Predicting the item class/category of a case
- **Clustering**  
Finding the structure of data; summarization
- **Associations**  
Associating frequent co-occurring itemset/event
- **Anomaly Detection**
- **Sequence Mining**
- **Dimension Reduction**
- **Recommendation Systems**

## Libraries that we used for ML

- ▶ Numpy
- ▶ SciPy
- ▶ Matplotlib
- ▶ Pandas
- ▶ Scikit Learn

## Words

- **Benign** - iyi huylu
- **Malignant** - kötü huylu
- **Accurate** - kesin

## Supervised vs Unsupervised Learning

- ❖ **Supervised Learning**
  - Regression
  - Classification
- ❖ **Unsupervised Learning**
  - Dimension reduction
  - Density Estimation
  - Market Basket Analysis
  - Clustering

## Supervised vs unsupervised learning

### Supervised Learning

- **Classification:** ★  
Classifies labeled data
- **Regression:** ★  
Predicts trends using previous labeled data
- Has more evaluation methods than unsupervised learning
- Controlled environment

### Unsupervised Learning

- **Clustering:**  
Finds patterns and groupings from unlabeled data
- Has fewer evaluation methods than supervised learning
- Less controlled environment